TRANSLATION OF SCIENTIFIC EVIDENCE INTO TOBACCO CONTROL POLICY IN MALAYSIA: A NARRATIVE REVIEW

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Abstract

With the allocation in funding for research, there has been growing interest in studying evidence-based policy formulation and decision-making to account for the funding allocation. By employing a narrative review, this paper focuses on the successes, failures, and challenges in the adoption of the MPOWER strategies in implementing the Tobacco Control Policy in Malaysia. The main objective of this paper is to narrate on the translations of research evidence in the design and implementation of the Tobacco Control Policy in Malaysia. Comparisons are made with developed and developing countries. Literature on tobacco control acts and policies were retrieved from online databases using keywords such as "smoking, tobacco, cigarette, and policy control". Malaysia has adopted both local and global research evidence in implementing the Tobacco Control Policy and has seen steady progress in reduced prevalence of smoking through the years. Nevertheless, some challenges, including shortage of manpower for the enforcement and innovation of tobacco products, prevail, and more efforts are warranted.

Keywords: Translation, Research Evidence, Tobacco Control, Policy

Introduction

Each year, billions of dollars from the government ministries or private sectors have been spent on research funding with the ultimate aim to generate evidence-based research findings. Despite this, there is a dearth of evidence-based research about decision-making and policy formulation (1). There is however, a growing interest to look into the role of research in policy-making processes.

Evidence-informed policy-making is the process of policy-making utilising evidences which are the actual or asserted facts searched systematically, appraised critically, analysed and synthesised precisely (2). Although it is not easy to measure the direct effects of evidence-based research on the policy formulation process (1), it is necessary to look into this subject matter as the budget allocated for research needs to be accounted for.

The main objective of this paper is to narrate the utilisation of research evidence in the formulation of health policy based on the Tobacco Control Policy in Malaysia, together with the discussion on the implementation and effectiveness of the World Health Organisation Framework Convention on Tobacco Control (WHO FCTC) in tobacco control in other Asian countries.

By employing a narrative review approach, this paper focuses on the successes, failures, and challenges in implementing each of the MPOWER strategies adopted in the Tobacco Control Policy and comparisons with other developed and developing countries. All the relevant literature on Tobacco Control Policy in these countries were retrieved from online databases including Google Scholar, Scopus, PubMed, Science Direct, and EbscoHost using keywords such as "smoking, tobacco, cigarette, and policy control".

The chronology for the development of the Tobacco Control Policy in Malaysia is depicted in Table 1 as below:

Table 1: Chronology for the development of tobacco control policy in Malaysia

Year	Developments
1993	Introduction of text health warning '*Amaran Oleh Kerajaan: Merokok membahayakan kesihatan*' (Warning from the government: Smoking is detrimental to health).
Sept 23 2003	Malaysia took the first step of signing an international treaty on tobacco control with the World Health Organisation Framework Convention on Tobacco Control (WHO FCTC).
Sept 16 2005	Ratification and implementation of the signed international treaty on tobacco control.
2005	Started to be a party to the World Health Organisation Framework Convention on Tobacco Control (WHO FCTC) and committed to the implementation of its MPOWER strategies consisting of 38 implementation articles targeting to reduce the burden of smoking and smoking-related diseases in Malaysia (3).
2015	The National Strategic Plan for Tobacco Control 2015-2020 was formalised and further consolidated the short, medium, and long-term targets for tobacco control in Malaysia. The strategic plan also incorporated the WHO Global Non-Communicable Diseases target to reduce the smoking prevalence in Malaysia from 23.1% in 2011 to 15.0% in 2025, while the long-term target is to reduce the smoking prevalence to less than 5% by the year 2045.

Ultimately, the strategic plan aims to develop a smoke-free Malaysian generation. Today, Malaysia is one of the several countries in the world which have formally declared their Endgame targets, and hopes to achieve the Endgame of Tobacco in Malaysia by 2045, to achieve a national smoking prevalence of less than 5% (3).

The WHO FCTC and MPOWER packages consist of the following strategies:

- **M**onitor tobacco use and prevention policies
- **P**rotect people from tobacco smoke
- **O**ffer help to quit tobacco use
- **W**arn about the dangers of tobacco
- **E**nforce ban on tobacco advertising, promotion, and sponsorship
- **R**aise taxes on tobacco

These strategies are based on years of scientific evidence and collaboration of the WHO FCTC Secretariat with researchers worldwide to devise the best approach to reduce tobacco use and improve the current knowledge on tobacco control. The Malaysian government will convene with representatives from 180 other nations at the Conference of Parties, where all party members of WHO FCTC share and discuss the latest scientific evidence (3).

This paper serves to give a glimpse of how the tobacco control policy in Malaysia was developed, incorporating the translations of some of the examples of local and international scientific evidence on tobacco control.

M - Monitor tobacco use and prevention policies

It has been a requirement of WHO FCTC for all parties to establish appropriate programs for national, regional, and global surveillance and monitoring of the magnitude, patterns, determinants and consequences of tobacco consumption for effective planning, implementation, and evaluation of the MPOWER strategies (4). Hence, monitoring system should be employing standardised and scientifically valid data collection and analysis practices.

In Malaysia, organisations, including the Malaysian Institute for Public Health, International Tobacco Control Policy Evaluation (ITC) Project and local universities, have actively monitored tobacco use and control policies. The Institute for Public Health has also been conducting surveys at intervals, albeit irregularly, since 1986. In order to facilitate global data comparison and reliable data trending analysis, standardised internationally accredited surveys are utilised. In Malaysia, internationally utilised tools, including Global Adult Tobacco Survey (GATS), Global Youth Tobacco Survey (GYTS), and Global School Health Survey (GSHS), are adopted in several national surveys such as the National E-Cigarette survey (NEC) and the Tobacco and E-Cigarette Survey Among Malaysian Adolescents (TECMA). GATS and GYTS are designed to monitor tobacco use among adults aged 15 and above, and youths of 13-15 years old, respectively, while GSHS is a school-based survey with a tobacco component. Key findings of GATS and GYTS have been utilised in Global Tobacco Surveillance System. In addition to that, the tobacco survey was included in the National Health and Morbidity Survey (NHMS) 1986 (Peninsular Malaysia only), 1996 and 2006 at ten-year intervals, and subsequently 2015 and 2019 at five-year intervals (3).

From 2005-2014, the Ministry of Health (MOH) Malaysia, in collaboration with the Clearinghouse for Tobacco Control, National Poison Centre (NPC), Universiti Sains Malaysia (USM), University of Waterloo, Canada, the Cancer Council Victoria, Australia, and Roswell Park Cancer Institute, US had been conducting the International Tobacco Control (ITC) Malaysia Survey, evaluating on various elements of FCTC implementation in Malaysia.

In 2016, MOH Malaysia also collaborated with Universiti Putra Malaysia (UPM) to conduct a special study entitled 'The Relationships between Tobacco Taxation and Demand Determinants to Reduce Cigarettes Consumption and Smoking Prevalence in Malaysia' to evaluate the impact of tobacco taxation policy in Malaysia.

P - Protecting people from tobacco smoke

The primary objective of implementing smoke-free initiatives by the government is to protect healthy individuals from the harms of second-hand smoke (SHS) (5), aside from helping smokers quit smoking and preventing youth from taking up the smoking habit.

A study by Samin (6) emphasised that implementing a smoke-free policy could reduce long-term exposure to second-hand smoke pollution, encourage smokers to quit smoking, and ultimately reduce the cases of chronic diseases caused by cigarette smoke. However, social peers' influence was one of the social factors negatively affecting the decision to quit smoking (7). Another study also observed that campaigns and programmes regarding smoking and second-hand smoke should not only educate but also transform people's attitudes towards second-hand smoke (8). Besides, the local authority needed more empowerment to perform enforcement to improve the existing Smoke-free Legislation (SFL). Nevertheless, it was reported that Malaysia had taken proactive action in protecting its people from the adverse effects of tobacco (9).

Beginning Jan 1 2020, smoking in all restaurants, coffee shops, hawker centres, and open-air eateries nationwide would be banned. Smokers have to be at least 3 metres or 10 feet away from any food and beverage establishments before they can light up. This is in line with Brunei, which has implemented non-smoking zones of areas within a distance of 6 meters from the perimeter of the buildings (10). In the Philippines, no designated smoking areas are permitted within 10 meters of places where people pass or congregate (10). In the Balanga City, a total cigarette ban was imposed within a 1-km radius on the University Town and surrounding areas (11).

O - Offer help to quit tobacco use

According to the Global Adult Tobacco Survey (GATS) 2011 (12), 68% of the smokers who visited a healthcare provider reported being asked about smoking status, while 53% were advised to quit smoking. This showed that not many smokers had received help and advice on quitting smoking. Besides, lack of promotion for Quit Smoking Clinics (QSCs) in public hospitals also leads to low awareness of the service among Malaysian smokers. (13) This comes down to the fact that Malaysian smokers need help, and more attention is required to treat the smokers presenting themselves in hospitals (14).

There has been research in Malaysia highlighting various aspects of assistance for smoking cessation (3). Lower cigarette intake, lower Fagerström score, longer duration of follow-up and more frequent visits were significantly associated with success in quitting smoking (15). Physical activity consultation (PAC) was found to be helpful to increase the physical activity levels of participants, which can result in smoking abstinence (16). More efforts were also warranted to increase the participation of community pharmacists in giving continuing education on tobacco cessation (17). Findings from a study suggested that graphic warnings could lead to higher reactions and subsequent quitting of smoking (18). Another study also showed that the reduction in salivary nicotine level was more sustainable post-Ramadan, and this could encourage smoking cessation during Ramadan (19).

W - Warning people on the dangers of tobacco

Commencing in 2009, the legal requirement for pictorial health warnings was implemented, followed by the requirement of full compliance of pictorial health warnings on all cigarette packs for sale in the Malaysian market. Currently, the Malaysian pictorial warnings employ close-up views of body parts of smokers affected by diseases linked to smoking. For example, "Smoking Causes Lung Cancer" shows a real-life photo of decaying lungs (3).

A few studies showed that pictorial health warning labels significantly led to greater impact and were more able to sustain an effect than text-only warning labels (20, 21). In addition, studies also found that pictorial health warning labels were an important source of information which was able to help increase smokers' knowledge of the adverse health effects of smoking and level of thinking about the health risk of smoking, as well as have a positive impact on the interest in quitting smoking (22-24).

Albeit pictorial warning labels had led to a significant reduction in smoking behaviours compared to text-only warning labels, researchers at the UNC Gillings School of Global Public Health, United States, found that it did not necessarily change the beliefs in risk of harm (25,26). Studies also suggested that cigarette packaging warnings might reduce over time, causing minimal impact on smoker behaviour (27).

E - Enforce ban on tobacco advertising, promotion, and sponsorship (TAPS)

The WHO FCTC in Article 13 (28) states that all parties shall undertake a comprehensive ban of all tobacco advertising, promotion, and sponsorship (TAPS) following its constitution or constitutional principles to reduce the consumption of tobacco products.

There are a few current research contributing to the policy on TAPS in Malaysia. With the prohibition of TAPS as stipulated, there has been a significant decline in tobacco advertisements in various media, with only 21.2% of adult smokers reported noticing cigarette packages displayed in the stores (29). Following the ban, the industry also started to employ the promotion techniques such as selling special editions cigarettes using pretext (brand anniversary) and introducing a 'gift' pack (30).

R - Raise the price of tobacco

The most effective approach for tobacco control is none other than reducing the demand for it, and the most cost-effective way is simply by increasing the tobacco prices through tobacco taxes (3).

This decision was based on a few conducted studies. For instance, a study stipulated that the tax rate should increase to 85.5% to achieve the Endgame Target of 5% prevalence rate in 2045 (31). Furthermore, an increase of 25% in excise tax was also predicted to reduce cigarettes consumption by 3.37% and generate an increase of RM434 million in tax revenues (32). Increasing the tobacco price is crucial as the price is a significant determinant of demand for cigarettes in the long run (33), and cigarettes have become more affordable (34,35).

Studies from overseas also suggested that increases in tobacco tax are the single most effective intervention in raising the low smoking cessation rates (36-38). A review done by the International Agency for Research on Cancer remarked that a 50% increase in tobacco prices reduced about 20% of tobacco consumption (39). In France, cigarette smoking in adults reportedly decreased from six cigarettes per day to three since the tripling of cigarettes prices over 12 years (38). Also, the new tax scheme implemented by Taiwan in 2002 has brought about an average annual 13.27 packs per person (10.5%) reduction in cigarette consumption (40).

Discussion

Research has been defined as the structured process of collecting, analysing, synthesising, and interpreting in terms of explaining or describing data to provide answers for theoretical questions not visible in the data themselves (41). Meanwhile, policies can be described as "governmental or organisational guidelines about allocating resources and principles of desired behaviour" (41). Incorporating research findings into decision-making and policy formulation involves two groups, namely researchers known as the knowledge producers and policy-makers known as the knowledge users (42).

Research is vital in providing evidence to inform policy-makers about pressing issues, helping program managers develop programs with solid data and information, guiding the implementation process, and evaluating programs and policies (43). Translations and incorporation of research findings into informed policy-making are crucial as they will help improve the effectiveness of public health programs and attain better health status of the population aside from helping to make better decisions on how to spend state funds (44). Therefore, evidence gathered from research is only meaningful when it is translated and implemented in clinical practice (45).

The Ministry of Health (MOH) Malaysia highly advocates the formulation of health policy and developing public health programmes with evidence-based research data and findings. In this present study, the utilisation of research findings was found to be good and adequate in implementing evidence-based tobacco control measures. A Technical Group was set up by the team serving to gather and validate all the evidence before presenting it to the team. Every decision that was penned down must be validated and enhanced by research data. As presented earlier, the planning and implementation of every strategy in MPOWER had considered and incorporated the available research findings. Nevertheless, it is noteworthy that the policy-makers had to also incorporate global research evidence in addition to the local studies due to insufficient local research data and findings.

The collective efforts by the governmental, intergovernmental, and non-governmental organisations have impacted the control of tobacco consumptions throughout the years. For instance, WHO has assisted Asian nations with targeted advice and guidelines that resulted in the implementation of the five-yearly action plans on tobacco or health for the Western Pacific region and the WHO's Framework Convention on Tobacco Control (46). Funding and resources are also increased in low-income and middle-income countries, including that from Bloomberg Philanthropies and the Bill and Melinda Gates Foundation in support of tobacco control (46).

The FCTC, being the first global evidence-based public health treaty under the initiatives of WHO, was designed with the aim of addressing and curbing the tobacco epidemic (47). Following that, the adopting of MPOWER strategies saw more policy changes and mandates implemented by the government in public health legislation such as the establishment of smoke-free areas, implementation of graphic health warnings, execution of bans on promotion, removal of business operation licences for non-compliance, and formulation of taxation policy (46, 47).

In line with the WHO FCTC, Malaysia has launched a series of tobacco control programmes, including the Control of Tobacco Product Regulations and its enforcement, the tobacco duty, the national anti-tobacco campaign, school-based programmes, and Quit Smoking Clinics (48, 40). Malaysia Quit Smoking Services (mQuit), a Public-Private Partnership, was introduced in November 2015. Since then, the number of smokers registered to get quit smoking treatment has been increasing every year.

Since the implementation of MPOWER, there has been a quadrupling of the number of member countries adopting at least one measure (49). About 65% of the world's population, which make up around 5 billion people, are now covered by at least one MPOWER measure at the highest level of achievement (49).

Besides, the National Tobacco Control Program (NTCP) was formulated in Malaysia, introducing six strategies covering legislative control, health promotion and public advocacy, tobacco tax policy, smoking cessation services, research, monitoring and evaluation to multi-sectoral collaboration and capacity building (9). Under NTCP, health promotion campaigns such as *Tak Nak* (Say No) campaign, *"Kempen Nafas Baru Bermula Ramadan"* (a campaign helping Muslim smokers to quit during the fasting month), setting up of Quit Smoking Clinics, Quitlines which are telephone services offering advice on quitting smoking, as well as the Blue Ribbon Campaign, have been initiated (9).

As part of the enactment of Smoke-Free Legislation (SFL) in Malaysia, smoking has been prohibited in premises which include hospitals or clinics, public toilets or lifts, air-conditioned restaurants or shops, public vehicles, airports, government premises, ministerial offices, educational institutions, nurseries, shopping complexes, petrol stations, stadiums, religious buildings, libraries, and many other public places as stipulated in the Regulation 11 Control of Tobacco Product Regulation (CTPR) 2018 (9). This is in contrast with the comprehensive SFL implemented in the developed countries such as the United Kingdom (UK). In Scotland and the Republic of Ireland, UK, smoking has been comprehensively prohibited in all enclosed public places and indoor workplaces, including bars, restaurants, and cafés (50, 51).

From 2013, Malaysia has added six new Pictorial Health Warnings (PHWs) to the original six PHWs printed on the cigarette packs. Malaysia has also increased the size of PHW from 40% to 50% on the front panel. All cigarette packs are to be sold in a standard packaging containing 20 sticks of cigarettes only. All direct and indirect forms of sales promotions of tobacco products are prohibited. Also, descriptors such as "low tar", "light", "mild", and others that reflect on the grading, quality, or supremacy of the product are banned from being printed on tobacco product packs (52).

As part of the efforts and strategies in the tobacco cessation movement, governments and health organisations in countries like Malaysia, Hong Kong, and New Zealand have also set endgame targets of less than 5% smoking prevalence in their respective countries (46).

All these concerted efforts saw decreases in tobacco smoking prevalence among adults over a decade between 2007 and 2017. Smoking rates decreased from a global average of 22.5% to 19.2%, which was a relative reduction of 15% over ten years (49). Meanwhile, the relative reduction of the smoking rate reported in high-income countries was 20%, 12% in middle-income countries, and 19% in low-income countries (49). Besides, it was also reported that the total number of smokers globally decreased by 29 million within 15 years from 2000 to 2015 (53).

According to the National Health and Morbidity Survey (NHMS) 2019, the overall prevalence of smoking among Malaysians aged 15 years and above was 21.3% which was equivalent to 4.9 million (95% CI: 19.86, 22.75). This figure was a slight reduction from the 22.8% reported in NHMS 2015 (55,54) as well as the figure of 23.1% reported in the Global Adult Tobacco Survey (GATS) 2011 (12).

In addition to that, many international non-governmental organisations (NGOs) such as the Union for International Cancer Control, the International Organisation of Consumer Unions, and local health organisations started to meet up regularly in tobacco control meetings and workshops throughout the 1980s (46). The setting up of regional NGOs for tobacco control started to take place as well, with the major NGOs being the Asia Pacific Association for the Control of Tobacco (PACT), the Asian Consultancy on Tobacco Control (ACTC), and the Southeast Asia Tobacco Control Association (SEATCA).

Moreover, the utilisation of mass media such as television, print, digital or social media, and radio broadcasts could be a vital intervention in changing the smoking behaviours or habits amongst smokers (56, 57). Mass media campaigns such as anti-smoking advertisements broadcast at regular intervals and sufficient exposure levels are critical in raising public awareness, educating the harms of smoking, changing smoking attitudes and beliefs, reducing smoking prevalence in the population, as well as promoting quitting smoking habit in smokers (58-61).

Nevertheless, Malaysia has been facing some rising challenges in the combat of smoking cessation. The major challenge faced by Malaysia has been the lax enforcement by the relevant authorities and parties of the SFL in the smoking prohibited premises (9). There has been a shortage of manpower for enforcement of SFL due to insufficient environmental health officers in Malaysia to perform consistent and active monitoring in the premises (9).

Also, innovation of tobacco products, such as the introduction of electronic cigarettes (e-cigarettes) in the Malaysian market since 2009, has posed a great challenge in implementation of SFL (9). A survey conducted by International Tobacco Control (ITC) of e-cigarettes in 10 countries found that Malaysia was one of the countries with a high 14 percentage of e-cigarettes users (62). The usage was found to be increasing and more popular as e-cigarettes are perceived to be "healthier" despite the toxic compounds released in their vapour. Also, it has been taken as an alternative to cigarettes amongst those attempting to quit smoking.

Moreover, in addition to government-level policy changes, comprehensive tobacco control strategies should also take into the consideration of individual-level behaviour changes in quitting smoking (63) as well as pharmacotherapy intervention such as nicotine replacement therapies (NRTs) (64). Behavioural change techniques for smoking cessation such as counselling sessions, group therapy, utilisation of technology, and self-help materials are warranted. In addition, getting social support from family members and friends is an essential factor underlying behaviour change (64).

In response to the call for utilising research evidence in informed policy and decision making, it is noteworthy that Malaysia has played an active role by incorporating local and global research evidence in the formulation of its Tobacco Control Policy. Its implementations saw a reduction in the smoking prevalence rate throughout the years, and this has proven the importance of research evidence-based policy decisions. Nevertheless, more policies backed by research findings as part of curbing tobacco smoking in this country are still warranted.

Conclusion

The Ministry of Health (MOH) of Malaysia is highly committed to applying scientifically sound knowledge and evidence-based health practice in all tobacco control policies. This practice is warranted as local and international scientific evidence help to increase the effectiveness of tobacco control programme while optimising the utilisation of resources. Inevitably, this has indeed contributed to a policy aligned to the international call in a combat of reducing tobacco consumption.

Competing interests

The authors declare no conflicts of interest involved.

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